Mr. Jay McConnaughey
Washington Department of Fish and Wildlife
C/o Washington Department of Ecology
1315 W 4th Avenue
Kennewick, WA 99336

Re: Hanford Site 100 Area Assessment Plan, Volume I: Columbia River Aquatic Resources

Dear Mr. McConnaughey:

I am pleased to find that the Hanford Natural Resource Trustee Council (HNRTC) has undertaken an assessment of potential injuries to natural resources associated with releases of chemical and radioactive materials from the Hanford Project. I am also pleased that HNRTC has included a public process with opportunity to provide written comment on the subject plan. My comments are relatively minor and mainly focus on the provisions of the Quality Assurance Project Plan used by the U.S. Geological Survey-Biological Resources Division Laboratory in Jackson to assess injuries to chinook salmon from chromium. They are:

General Comments

Conceptually, I agree with undertaking studies focusing on potential injuries to salmon from exposure to chromium as sodium dichromate. I also think that a strong case is made (see Tables 8-10 in Assessment Plan) to address potential injuries to salmon from exposures to ^{90}Sr and ^{3}H, and from exposure to the mixture of chemical and radioactive elements that enters the Columbia River in groundwater and from surface seeps.

Specific Comments

1) I think that conducting the salmon bioassay studies in Jackson and Spearfish employing experimental water that only approximates (simulates) Columbia River water may not be easily defended. Clearly, you introduce an uncertainty with respect to results of exposures in the Columbia River. I think it would have been better to conduct the studies in a mobile laboratory located along side the Columbia River. I see that this approach is being considered for Phase II. If pathogens were or are an issue, then well water might have been used. A collaborative undertaking with a Hanford contractor (one operating a hatchery) is yet another possible approach.

2) For a similar reason, that of introducing uncertainty, I don't think that using chinook salmon from the McNenny State Fish Hatchery in Spearfish is the best approach to determine the potential for injury to Columbia River chinook salmon. I think it would have been better to work with the stock of fish inhabiting the Hanford Reach.

3) If you disregard my first comment for a moment, in Task 1-ovum and sperm survival and egg fertilization tests on page 7 of the QAPP, you indicate that you will use "experimental water" adjusted to a hardness of 80mg/l as $CaCO_3$

(Columbia River conditions), yet on page 8, you indicate that the these tests will be conducted with McNenny Hatchery water, which has a hardness of 360 mg/L $CaCO_3$. In Task 3-fish health studies, you indicate that a hardness of 150 mg/L as CaCO3 will be maintained. There appear to be some inconsistencies in the properties of the "experimental water" that you will use. Which is correct?

4) How did you determine that four replicates for each test concentration were enough? Is there a statistical basis for this design?

Thank you for this opportunity to comment. I look forward to seeing the results of HNRTC studies.

Yours very truly,

John A. Strand

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